platform, two ladders and safety railing. Not required if all fittings used in the loading or unloading of the tank car are accessible from ground or end platform.

(2) *Dimensions.* (i) Ladder: Ladder stiles, three-eighths by two inches or equivalent, wrought iron or steel. One and one-quarter inch extra strong pipe will be considered equivalent.

(ii) Ladder treads minimum diameter, five-eighths of an inch, wrought iron or steel.

(iii) Minimum clear length of treads, fourteen inches.

(iv) Maximum spacing of treads, nineteen inches.

(v) Minimum clearance of treads and ladder stiles, two inches, preferably two and one-half inches.

(vi) Operating platform, minimum width, seven inches; minimum thickness, one and three-quarters inches.

(vii) Safety railing, one and one-quarter inch wrought iron or steel pipe.

(3) *Location.* (i) Operating platform to be of sufficient length to provide access to all operating fittings. Ladder to be located on sides of car at center.

(ii) The safety railing shall enclose the operating platform, manway and fittings used in the loading and unloading of the tank. Railing shall be open only at the ladders where it shall extend in a vertical direction down to, and be securely attached to the platform. Maximum width of opening, twenty-four inches.

(4) *Manner of application.* (i) The ladders shall be securely fastened to the operating platform. The lower portion of ladder shall be braced in such a manner as to prevent any movement.

(ii) The operating platforms shall be supported to prevent sagging and be securely attached to the tank.

(iii) The safety railing shall be securely attached to four stanchions or corner posts, which shall be securely attached to the tank or operating platform.

(k) *Manner of application of safety appliances on tank cars covered with jackets.* On tanks covered with jackets, metal pads shall be securely attached to the shell proper, to which brackets shall be fastened for securing the safety appliances attached to the tanks; or, the safety appliances (with the exception of the operating platform brackets) may be secured to the jackets reinforced with metal pads at the point of attachment, which pads shall extend at least two inches from the center line of rivet holes. The operating platform brackets shall be secured to the jacket reinforced with suitable bands. When the safety appliances are attached to the jacket covering of the tank, the jacket shall be tightened so that there will be no danger of its slipping around.

[33 FR 19663, Dec. 25, 1968, as amended at 34 FR 11974, July 16, 1969]

§ 231.22 Operation of track motor cars.

On and after August 1, 1963, it shall be unlawful for any railroad subject to the requirements of the Safety Appliance Acts to operate or permit to be operated on its line track motor cars to pull or haul trailers, push trucks, hand cars, or similar cars or equipment.

EFFECTIVE DATE NOTE: At 28 FR 7839, Aug. 1, 1963, the effective date of §231.22 was stayed until further notice.

§ 231.23 Unidirectional passenger-train cars adaptable to van-type semi-trailer use.

(a) *Hand brakes*—(1) *Number.* Same as specified for ''Passenger-Train Cars Without End-Platforms.''

(2) *Location.* Each hand brake shall be so located that it can be safely operated while car is in motion. The hand brake operating device shall be located on the end of car to the left of center.

(b) *Brake step*—(1) *Number.* One (1).

(2) *Dimensions.* Not less than twenty-eight (28) inches in length. Outside edge not less than eight (8) inches from face of car, except when ''A'' frame is used and extends beyond end of car, a platform of anti-skid design covering the extended portion of the ''A'' frame may be used as brake step.

(3) *Manner of application.* Brake step shall be securely fastened to car and when additional support is necessary, metal braces having a minimum cross-sectional area three-eighths (⅜) by one and one-half (1½) inches or equivalent shall be securely fastened to body of car with not less than one-half (½) inch bolts or rivets.

(c) *Sill steps*—(1) *Number.* Two (2).

(2) *Dimensions.* Minimum length of tread, ten (10) preferably twelve (12) inches. Minimum cross-sectional area, one-half (½) by one and one-half (1½) inches, or equivalent, wrought iron, steel or other metal of equivalent strength. Minimum clear depth, eight (8) inches.

(3) *Location.* One (1) near the rear or trailing end of the car on each side, not more than twenty-four (24) inches from corner of car to center of tread of sill step.

(4) *Manner of application.* Same as specified for ''Passenger-Train Cars Without End-Platforms.''

(d) *End-clearance.* No part of car above end sills except the brake step shall extend to within twenty (20) inches of a vertical plane parallel with end of car and passing through the outside edge of any part of an adjoining car.

(e) *Side handholds*—(1) *Number.* Four (4).

(2) *Dimensions.* Minimum diameter, five-eighths (⅝) of an inch, wrought iron, steel or metal of equivalent strength. Minimum clear length, sixteen (16) preferably twenty-four (24) inches. Minimum clearance, two (2) preferably two and one-half (2½) inches.

(3) *Location.* Horizontal, two (2) over each sill step. Lower handhold shall be not less than twenty-four (24) nor more than thirty (30) inches above center line of coupler. Upper handhold shall be not less than fifteen (15) nor more than nineteen (19) inches above lower handhold. Clearance of outer end of handhold shall be not more than eight (8) inches from end of car.

(4) *Manner of application.* Side handholds shall be securely fastened with not less than one-half (½) inch bolts with nuts outside (when possible) and riveted over, or with not less than one-half (½) inch rivets.

(f) *Horizontal end-handholds*—(1) *Number.* Seven (7).

(2) *Dimensions.* Minimum diameter, five-eighths (⅝) of an inch, wrought iron, steel or other metal of equivalent strength. Minimum clear length, sixteen (16) inches. Minimum clearance, two (2) preferably two and one-half (2½) inches.

(3) *Location.* End-sill: One (1) near each side at the rear or trailing end of car on face of end-sill or sheathing over end-sill, projecting outward or downward. Clearance of outer end of handhold shall be not more than sixteen (16) inches from side of car.

(i) Lower: One near each side of the rear or trailing end of car, not less than twenty-four (24) nor more than thirty (30) inches above center line of coupler.

(ii) Upper: One (1) near each side at the rear or trailing end of car not less than fifteen (15) nor more than nineteen (19) inches above lower handholds. Clearance of outer ends of lower and upper handholds shall be not more than eight (8) inches from side of car. Lower and upper handholds shall be spaced to coincide with corresponding side handholds, a variation of two (2) inches being allowed. On front end of car there shall be one (1) additional end handhold full length of car not less than forty (40) nor more than fifty (50) inches above center line of coupler. Clearance of each end of handhold shall be not more than eight (8) inches from side of car. When construction will not permit the use of a single handhold, four (4) handholds, each not less than sixteen (16) inches in length may be used, provided dimensions and location coincide.

(4) *Manner of application.* End handholds shall be securely fastened with not less than one-half (½) inch bolts with the nuts outside (when possible) and riveted over, or with not less than one-half (½) inch rivets. When marker sockets or brackets are located so that they cannot be conveniently reached, suitable steps and handholds shall be provided for men to reach such sockets or brackets.

(g) *Uncoupling levers.* Each car shall be equipped to provide means of coupling and uncoupling without the necessity of men going between the cars.